

electricity and be effective from approximately midnight till 2 p.m. This period of heating will protect the pensioner in winter from the severe drop in bedroom temperature that otherwise occurs in the small hours, and will enable him to conserve his own heating resources for the afternoon and evening.

Local authorities and welfare organizations have already combined to provide "meals on wheels" to prevent pensioners from dying of the effects of malnutrition. They should now be able to combine to prevent the pensioners dying of cold by providing night storage-heaters. These heaters are cheap to run and easy to install wherever electricity is available. They are always installed with a separate meter and are automatic, so there need be no administrative problem over local authorities paying for the electricity consumed. The capital outlay of about £25 per heater is not much when it is remembered that when one pensioner has died the apparatus can be moved elsewhere for use by another.

No senile old-age pensioner can afford the 24-heating he needs in cold weather. This suggested arrangement would enable a local authority or welfare organization to help him keep warm without running the risk of cash assistance being diverted for less desirable purchases.—I am, etc.,

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G. HALE.

The Pool—A Correction

SIR,—In my letter (8 February, p. 366) I quoted Lord Newton as saying that the pool system had "considerable advantages for the Health Department." He was in fact referring only to the present method of determining practice expenses and reimbursing them via the Pool, and not to the Pool as a whole. There is a small mistake in the *Hansard* report which could lead to the interpretation I placed on Lord Newton's remark. This will be put right in the bound volume. The correct sense of his remark is that given above.—I am, etc.,

House of Lords.

TAYLOR.

Disappearing Catheter

SIR,—In your issue of 16 November (pp. 1251 and 1252) you published two short medical memoranda on accidental loss of plastic catheters in the venous system. Both these articles emphasized the dangers of leaving such fragments and listed a number of cases quoted from the literature in which death from septic embolus had followed such an accident.

A similar case has recently occurred in Cardiff and has led to exploration of the right heart to retrieve the catheter. From local inquiries it seems that this accident of breaking off a piece of catheter in the venous system is probably a good deal more common than is generally supposed, and I do not think we yet know how dangerous it is to leave such a fragment. It is clearly desirable that the risk incurred should be known more accurately, as the risks involved in a prolonged search within the chest, heart, and pulmonary vessels are also not inconsiderable. It may well be that the reported cases are giving us too pessimistic a picture, and your readers would be doing a real service if they

would contribute their experiences of this mishap and its outcome so that a more realistic assessment of the danger could be made.—I am, etc.,

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Thrombotest or Quick's Test?

SIR,—I read with interest Dr. J. W. Keyser's paper (14 December, p. 1514) and Dr. P. Barkhan's letter (11 January, p. 119) on the above subject. May I be allowed to mention the following points?

(1) Both authors give the prothrombin clotting-time ratio (P.C.T.R.) without recording the normal clotting-time. This could be very misleading as it may be affected by the activity of the reagent used. Quick and I consider 11–12 seconds as being the clotting-time of normal plasma by a well-prepared brain-tissue extract. If a reagent is weak due to either substandard preparation or deterioration on storage, it should not be expected to give exactly the same P.C.T.R. as a more active reagent because of one or both of the following reasons: (a) In terms of dilution the diminished reactivity shown as 1–2 seconds in the normal range (clotting-time of 13–14 seconds) is actually equivalent to at least twofold. The use of such a weak reagent in estimating the prothrombin times of patients treated with anticoagulants is liable to produce a P.C.T.R. different from that obtained with a fully active reagent; the difference in clotting times at normal levels may be tremendously magnified at therapeutic levels. (b) As the prothrombin time is affected by at least four blood-clotting factors the relative sensitivity of a weak reagent to these factors may not be identical to that of a fully active reagent.

(2) We still do not know which of the factors affected is important in anticoagulant therapy or which factor(s) when sufficiently depressed is responsible for haemorrhagic complications. This, combined with the unequal sensitivity of thrombotest and brain-tissue extract to these factors,¹ particularly factor VII, biases the determination of a therapeutic level for the clotting activity of thrombotest as compared with the results of Quick's method. Only a well-controlled combined clinical and laboratory investigation on a large series of patients and more research to discover the particular factor(s) which should be reduced to achieve effective anticoagulation could help in this connexion.

(3) Without being concerned here with the recent doubts about the effectiveness of anticoagulant therapy,² one must bear in mind that the prothrombin time as well as the thrombotest are nothing but means of arriving at the combined activity of certain clotting factors on being accelerated by tissue extract *in vitro*. Whether or not their results bear any relation to the blood-clotting mechanism *in vivo* is now being investigated. The results hitherto obtained show different behaviour inside the body, not only of blood-clotting factors but also of tissue factors.³ Furthermore, thrombosis in the presence of a prolonged prothrombin time⁴ and haemorrhage⁵ at a P.C.T.R. of 1.5 have been reported showing the complex nature of the *in vivo* conditions leading to intravascular clotting and bleeding episodes. I would like,

therefore, to end this letter by emphasizing that we should not forget the role of the vascular wall when investigating the causes and treatment of thrombo-embolism or haemorrhagic diatheses.—I am, etc.,

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Dental Anaesthetics

SIR,—Many critics of the methods used for general anaesthesia in dentistry overlook the fact that the standard of anaesthesia has to be adapted to prevailing conditions. With a few fortunate exceptions most dental surgeries in this country are ill-equipped for anaesthetic cases; while the general lack of accommodation for post-operative recovery may well preclude the use of intravenous relaxants, intubation, and other time-consuming adjuncts to modern anaesthesia. Moreover it is very much a matter of opinion whether a dental patient should be allowed to go home by public transport after some of the elaborate methods advocated by your correspondents, however well the patient may appear to be at the time.

As Dr. G. H. Stuart points out (25 January, p. 238), the administration of intranasal nitrous-oxide-oxygen for the extraction of teeth is not easy for the beginner, and requires a good deal of experience and training under supervision. However, until the general standards of ordinary dental practice are considerably improved—which includes many dental hospitals and clinics—gas and oxygen is probably the best dental anaesthetic we have got, and it is up to those responsible for the teaching of anaesthetics to see that it does not fall into disrepute. In many teaching hospitals the department of anaesthetics has too many other commitments to take more than a passing interest in dental anaesthesia; so that many difficult dental sessions are delegated to a perspiring and panic-stricken anaesthetic registrar, sometimes with considerable shock to the nervous system of all concerned. Partly because of the relatively crude working conditions in dental practice a considerable number of hospital consultant anaesthetists have come to regard the administration of a dental anaesthetic with dislike—perhaps "apprehension" is the right word—so that a whole generation of anaesthetists has come into being who know little or nothing about dental anaesthesia. This is borne out by current statistics, which show that less than 10% of general anaesthetics for dentistry are given by specialist anaesthetists.

Finally, if the dental profession would follow the advice given to them by their hospital teachers—which they do not—and limit the number of teeth to be extracted at one sitting under general anaesthesia at the massive and bloody "clearances" which sometimes take place in the dental surgery would soon be a thing of the past, and there would be no need for endotracheal intubation